REMARKS/ARGUMENTS

Reconsideration of this application is respectfully requested.

Drawings

The drawings were objected to under 37 CFR 1.83(a) on the grounds that the feature specified in claim 23 was not shown in the drawings.

Claim 23 calls for a metal ring gasket wherein the corners of the annular body are beveled and the annular body has an octagonal cross-section. This is shown in Figure 4, where the cross-sectional view of the metal ring gasket has beveled corners and eight sides. The ring gasket 18 is therefore octagonal, and the objection is traversed.

Claim Rejections – 35 USC § 102

The Office Action rejected claim 20 under 35 USC § 102(b) as anticipated by Volpin. Applicant respectfully disagrees.

Volpin discloses a metal ring gasket 10 for use in a threaded union for low pressure applications, as explained in applicant's response filed November 16, 2004.

The Office Action argues that the limitation "for being deformably compressed between first and second subcomponents of the threaded union, the metal ring gasket providing a high-pressure energized seal when mating ends of the first and second components are forced to abut by a nut for interconnecting the first and second subcomponents of the threaded union" is considered intended use and is given little patentable weight as long as the applied prior art is capable of fulfilling the intended use.

Applicant respectfully disagrees that there is any disclosure or teaching in Volpin that its seal is capable of fulfilling the intended use for at least the following reasons:

1) A pressure-energized seal, as is understood by those skilled in the art, is a seal that provides more resistance to leakage as fluid pressure within a contained volume increases. Volpin does not disclose a pressurize-energized seal. As fluid pressure increases within the contained volume of pipes 2 and 3 pressure on the exposed ends of the members 4, 12 increases proportionally with pressure times area of those exposed ends.

Consequently, as pressure increases, the exposed joint ends are forced apart, and gaps are then created around the edges of the seal ring 10, causing leakage. Volpin therefore fails to disclose or teach that hat seal ring 10 is a pressure-energized seal.

2) More specifically, Volpin provides no disclosure or teaching that seal ring 10 could be deformably compressed between first and second subcomponents of a threaded union and provide a high-pressure, energized seal when the subcomponent ends abut. For example, given the standoff between the respective ends of the members 4, 12, and the relative size of the seal ring 10, it appears to be impossible to force the ends of flanges 6, 14 together by any means, much less by means of the clamp ring 20. If enough mechanical force could be applied to deform the seal ring 10, it would likely mushroom between members 4, 12 and prevent them from abutting. Consequently, Volpin is incapable of fulfilling the claimed limitation of the metal ring gasket being "deformably compressed between first and second subcomponents of the threaded union, the metal ring gasket providing a high-pressure, energized seal when mating ends of the first and second components are forced to abut."

Volpin fails to teach a metal ring gasket for use as a seal in a threaded union that meets the limitations of claim 20. The rejection of claim 20 in view of Volpin is thereby traversed.

The Office Action further rejects claim 20 under 35 USC § 102(b) as being anticipated by Putch, et al. With respect to the metal seal ring disclosed between the flanged components of Putch, et al. (by way of inclusion in the drawing only), the metal seal ring is a BX ring. BX rings, which are well known in the art and widely used in flange technology, require sequential bolt tightening in order to achieve adequate compressive force to compress the BX ring into sealing contact with the ring grooves. When in such sealing contact, however, the BX ring does not provide a pressure energized seal.

Applicant encloses a print of material available from "The Source" found at woodcousa.com, which explains flange makeup, a procedure well known to those skilled in the art. As explained (see pages 2-4), not only must the flanges be bolted together, the

flange bolts must be tightened in a predetermined sequence to a predetermined torque. BX ring gaskets for flange connections have been widely used in high-pressure applications for many years.

Putch, et al. fail, however, to teach or suggest a metal ring gasket that can be deformably compressed between first and second subcomponents of a threaded union where, when compressed between abutting ends of threaded union subcomponents, this metal ring gasket provides a high-pressure, energized seal. More specifically, Applicant submits that a BX ring cannot be deformably compressed in the ring gasket grooves of a threaded union in accordance with the invention. The rejection of claim 20 in view of Putch, et al. is therefore traversed.

Claim Rejections – 35 USC § 103

The Office Action rejected claims 1, 3-7, 10, 12-14, 28 and 30-31 under 35 USC § 103(a) as being unpatentable over Putch, et al. in view of Laird.

Applicant respectfully traverses the rejection of independent claims 1, 4 and 28. As noted in the Office Action, Putch, et al. fail to teach or disclose a threaded union. Rather, Putch, et al. teach a flanged union that includes a metal wellhead seal for sealing between inner and outer wellhead components. A BX ring seal is used in a flange connection in a manner well known in the art and detailed in the publicly available literature attached hereto.

The Office Action asserts, however, that Laird teaches that connecting two components by either bolts 24 or a nut 30 are equivalent in the art. Applicant respectfully disagrees.

Laird teaches a gasket for pipe fitting. As is understood by those skilled in the art, pipe fitters deal with relatively low pressures, such as those encountered in steam boilers and the like. Even so, Laird teaches that (page 2, lines 80-88) "In some cases the gasket may be used where the gasket pressure must be high and expansion or other strain on the joint is very heavy. In such cases it may be necessary to provide abutment screws 36 which are threaded through one flange and arranged to make engagement with the face of the opposing flange by which movement of one flange relative to the other may be limited or prevented." Even assuming, however, that Laird provides a teaching that a

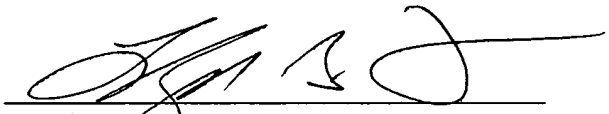
threaded nut connection is interchangeable with a bolted connection, there is no teaching in Laird that a threaded union connection could be applied to the structure in Putch, et al. For example, even if a nut 30 of Laird were mounted on the tubing head adapter 18 of Putch, there is no indication how the nut could be threaded onto tubing head 14 to operatively bring the two together without interfering with lock down screws 88. Thus, Applicant submits that independent claims 1, 4 and 28 are allowable over Putch and Laird.

Claims 2 and 3 depend from independent claim 1. Claims 5-19 directly or indirectly depend from independent claim 1, while claims 21-27 depend from independent claim 20, and claims 29-31 depend from independent claim 28. These dependent claims recite further limitation and are allowable in their respective combinations.

For at least the reasons set forth above, Applicant respectfully requests that the final rejection be withdrawn. Applicant further submits that this application is in a condition for immediate allowance. Favourable reconsideration and early issuance of a Notice of Allowance is requested.

Respectfully submitted,

NELSON MULLINS RILEY
& SCARBOROUGH, L.L.P.



Lloyd G. Farr
Registration No. 38,446

1320 Main Street
Columbia, SC 29201
(404) 817-6165
Fax (803) 255-9831